

Serial No. 09/265,432

REMARKS

In the Office Action mailed August 11, 2003, the Examiner noted that claims 1 and 9 were pending, that claims 3-8 and 11-16 have been withdrawn from consideration and rejected claims 1 and 9. Claims 1 and 9 remain pending for reconsideration which is requested. No new matter has been added. The Examiner's rejections are traversed below.

The Rejection

Page 2 of the Office Action rejects claims 1 and 9 under 35 U.S.C. § 103 over Nio.

In making the rejection, the Examiner acknowledges "Nio does not explicitly teach robot arms with a plurality of links as claimed." The Examiner did not cite a reference for this feature and nevertheless indicated that such would have been well known. The Examiner is apparently basing the rejection on the personal knowledge of the Examiner. The personal knowledge of the Examiner when used as a basis for a rejection "must be supported" by an affidavit as to the specifics of the facts of that knowledge when called for by applicant. See, e.g. 37 C.F.R. 1.104(d)(2). In short, the rules of the U.S. Patent and Trademark Office do not allow discretion on the part of the Examiner. Either the Examiner must support this assertion with an Affidavit or withdraw the rejection. The Examiner is requested to support the rejection with either an affidavit or a reference, or withdraw the rejection.

Even if the Examiner can find a reference teaching the links noted above, the present invention distinguishes over the prior art.

The present invention is solving a problem not recognized much less solved by Nio. The present invention is directed to "machining" a work piece. Nio is directed at imaging a work piece and joining two pieces by welding and not to "machining" or cutting of that work piece. An image can be obtained and a weld produced using an arm and wrist setup where the same set-up would not be suitable for machining. Because Nio is directed to imaging/welding, Nio is not confronted with the same problems as a machining tool robot. The prior art, including Nio even if it were equipped with a machining head, must perform a complex robot arm and wrist movement in 3D space to cut a beveled hole in the end of a pipe and cut a saddle shaped hole in the side of a pipe matching the beveled hole. This problem is particularly demonstrated by the application figures 11-13 and the corresponding text of the application. This complex wrist movement requires a higher level of sophistication by the robot. That is, less expensive robots conventionally cannot do this job. The inventors have recognized that the complex arm and

Serial No. 09/265,432

wrist movement can be avoided and that a less expensive and less sophisticated robot can perform this job if the machining tool is "offset" with a "radial" offset with respect to the "final rotational axis" of the "wrist."

Nio has a "robot wrist 4" to which is attached a welding tool having a wire electrode 7 as the end effector. The business end of the wire electrode 7 of the welding tool is on or coincides with the rotational axis 3' of the wrist 4 as depicted in Nio figures 1A and 1B.

"...2' the direction of a wrist twist axis (hereinafter referred to as the T axis) which is rotated by a motor (not shown); 3' the rotational center O of the T axis which passes through the rotational center 3 of the B axis and perpendicularly crosses the center 3; 4 a robot wrist to which the motions of the B axis 2 and T axis 2' are transferred; 5 a welding torch supporting rod coupled with the robot wrist 4; 6 a welding torch; 7 a wire electrode;...".

See Nio, col. 3, lines 9-20

There is no "bias" provided to the welding tool electrode 7 in Nio much less one with a radial offset with respect to the final rotational axis of the wrist as in the claimed invention of the present application. As a result, if the welding tool of Nio were to be used to cut a pipe, it would suffer the same problems as the prior art discussed in the present application. It would not solve the problem as does the present invention.

In particular, the present invention includes an "effecting end point biased with a radial offset with respect to a final rotational axis of said wrist" (see claims 1 and 9). This solves the problem of the prior art and Nio and allows a simpler less sophisticated and less expensive robot to cut pipes that need to be fitted together. The Examiner is requested to note that a bias is a deviation (see <http://www.m-w.com/cgi-bin/dictionary> and enter the key word "bias"). That is, the tool end effector of the present invention has a deviation or offset from the rotational axis of the wrist. As noted above, in Nio, the wire electrode is on or coincident with the rotational axis 3' of the wrist 4.

It is submitted that the invention of independent claims 1 and 9 distinguishes over the prior art and withdrawal of the rejection is requested.

Interview

The undersigned requests an opportunity to have a personal interview with the Examiner pursuant to MPEP Section 713.09 to discuss the invention as now claimed.

Serial No. 09/265,432


claims are therefore in a condition suitable for allowance. An early Notice of Allowance is requested.

If any further fees, other than and except for the issue fee, are necessary with respect to this paper, the U.S.P.T.O. is requested to obtain the same from deposit account number 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 11/12/3

By: 
Randall Beckers
Registration No. 30,358

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501